AMENDMENTS TO THE SPECIFICATION

The following is a complete, marked up listing of the amended paragraphs with underlined text indicating insertions, and strikethrough text indicating deletions.

Please amend the Specification as follows:

a1

[0019] FIGS. 13A and 13B illustrate an alternative embodiment of the frame mechanism in which moveable end portions are provided to increase the effective opening width of the frame. FIG. 14 illustrates the relationship between the controller, sensor assembly, sensor and receiver.

a2

[0026] A small annular space 62 is formed between the jet pump diffuser tailpipe and the adapter, hampering access to the three welds. Indeed, in typical installations, the small annular space may be as narrow as 0.625 inch (about 16 mm), rendering the necessary inspection of the welds a serious challenge. As shown in FIG. 2, the annual space 62 has both a depth and a width, *i.e.*, the spacing between opposing walls formed by the jet pump diffuser 34, the lower adapter ring 60 and the upper adapter ring 58, and may be further characterized by depth to width ratio.

change

a3

[0028] Much of the gross positioning of the frame is achieved by manipulating the support 64 with appropriate mechanisms (not shown). As illustrated in FIGS. 4A and 4B, it is preferable that the mechanisms permit the support to be moved in a controllable fashion and provide for rotation of the frame generally about the longitudinal axis of the support as well as provide for translational movement in the x, y and z directions.

Further, as illustrated in FIG. 4A, in the preferred embodiment of the present invention, the connector 66 allows for the controlled rotational or swinging movement of the frame about a generally horizontal axis substantially perpendicular to the longitudinal axis of the support to achieve a deflected position. As will be appreciated by those of ordinary skill, a variety of mechanisms and configurations may be used to achieve a connector assembly that provides this range of motion. One preferred configuration incorporates two motors into the connector assembly with one motor driving the circumferential movement of the carrier and the other driving the angular displacement of the frame relative to the support. Various types of gearing, locks, and position controllers may also be incorporated into the connector assembly as desired. This range of motion allows the orientation of the frame to be adjusted as necessary to allow it to be more easily moved into a scanning position and improve the utility of the apparatus in crowded or otherwise obstructed environments such as found in a RPV.

[0031] In a preferred embodiment, at least two holding mechanisms are employed to center the object being scanned within the arc of the frame and maintain that position for the duration of the scan. Depending on the nature of the object being scanned and the holding force necessary, alternative holding mechanisms such as a vacuum or suction pad 80 may be extended to seal against the object being scanned while withdrawing fluid from the interior of the pad to produce a pressure differential sufficient to hold the frame in place. If the object being scanned is ferrous, a magnetic pad 82, either permanent or electromagnetic, can be used to maintain the position of the frame. In addition to the basic contact member 76, 80, 82, the holding mechanism may also be provided with one or more positioner rods 84 that can assist in the positioning of the frame relative to the

object being scanned as the frame is moved into a scanning position or in separation of the frame from the object after the scan has been completed, *e.g.*, break the suction or magnetic contact. It is also possible to utilize a combination of generally static holding mechanisms, such as stand-offs and adjustable stand-offs, in combination with mobile holding mechanisms, such as pneumatic pistons, to achieve the desired positioning of the frame around the cylindrical object being scanned.

[0034] As illustrated in FIGS. 9A-9C, the carrier 72 may be supported ~~with in~~ within the frame 68 using one or more of a variety of mechanisms including wheels or glides provided on the frame or the carrier, FIG. 8A, and ball or roller bearings, FIG. 8B. Similarly, the mechanism used to move the carrier relative to the frame can include a rack and pinion assembly as illustrated in FIG. 8C. As will be appreciated by one of ordinary skill in the art, numerous mechanisms and configurations may be successfully employed for moving the carrier relative to the frame. Indeed, even with the basic rack and pinion configuration, the pinion gear and motor can be provided in either a fixed configuration, mounted on the frame, or a mobile configuration, mounted on the carrier, and interacting with a rack provided on the other component.

[0036] The sensor portion, including the sensor head ~~102~~, of the sensor assembly 74 is then moved into close proximity, *i.e.*, within a target separation distance, of the weld or other portion of the object to be scanned. Once the sensor portion is properly positioned, the carrier is moved relative to the frame to move the sensor portion along a circumferential surface portion of the object being scanned. It is preferred that the range of carrier movement extend at least about 90° in both the clockwise and counter-clockwise direction from the original carrier position. An approximately 90° counter-

clockwise carrier motion is illustrated in FIG. 10B. In this manner, with two sensor arrays provided at opposite ends of the carrier, the entire circumference of the object may be scanned without repositioning the frame.

[0037] Turning to the welds illustrated in FIG. 2, in order to examine the obstructed carrier plate, jet pump, jet pump adapter welds, at least the sensor portion, including the sensor head 102, of the sensor assembly 74 must be capable of extending into the annular region 62 and selectively positioning the sensor head adjacent each of the welds as illustrated in FIGS. 11A-11C. The sensor assembly preferably provides for the rotation of the sensor portion (illustrated in FIGS. 11A-11B) to permit scanning of surfaces on both sides of the annular region. Alternatively, front and rear sensor portions can be provided on a non-rotating sensor assembly or the apparatus can be removed from the RPV and the sensor arrays selectively reconfigured for the scanning of interior or exterior surfaces along the annular region. The movement and positioning of the sensor assembly 74 and sensor head 102 are determined by a controller. The sensor head 102 may comprise one or more devices including ultrasonic transducers, an array of eddy current sensors, or any other desired non-destructive measurement device. As the sensor head 102 is moved along the surface being scanned, the sensor generates a signal corresponding to a value of a property of the material forming the surface being scanned. The signal generated by the sensor is transmitted to a receiver so that the property of the surface may be analyzed. When an array of sensors are used, the need to adjust the location of the sensor assembly can be minimized.